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Attention to Attention

Reflexions on new Media in Education

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Abstract

In these years digital media and wireless networks are introduced in upper secondary schools in Denmark. This implies new “attentional objects” like updates on Facebook or tweets on Twitter within instant reach of the pupils and teachers. Also it implies new kinds of attention (awareness) like when pupils try to listen to the teacher and simultaneously participate in online games. To this new social setting the teachers has reacted with either prohibition or unconcern. What has not been realised is that the introduction of new media profoundly challenges the way attention hitherto has functioned as a psychic prerequisite for the social interaction between pupils and teachers. New kinds of “split attention” arise and new kinds of social mediation (regulation and “use”) of psychic attention become necessary if teaching in the new digital medium milieu shall be beneficial. In this paper we qualify this interpretation theoretically through systems theory and medium theory. Further we present initial results from the action research project Socio Media Education (SME) in which we work with how teachers and pupils can handle the

new attention-demanding situation, so the new media do not mean spoiled teaching, but new expanded possibilities for teaching and learning provided by the new media. Our core postulate is that the teachers and pupils have to develop social reflexion on 'the practice of attention' in the class, both on a social and individual level; use the new media to facilitate this reflexion *and* simultaneously (based on the on-going reflexion) learn to cope better with the new attention-demanding medium milieu, which means both to restrict oneself and behave more socially responsible and to develop better awareness skills (e.g. multiplexing skills). Only this (and not prohibition against Facebook, online games etc. neither unconcern and ignorance of the new media and their consequences for attention) - we argue - can generate adequate social norms regulating psychic awareness in the new digital learning environment.¹

Keywords

Digital media, wireless networks, education, attention, multitasking, multiplexing.

Introduction

From 2009-2011 we made studies in different upper secondary schools in Denmark in form of interviews and observations and small surveys about how digital media and wireless networks influenced the interaction between pupils and teachers (Tække & Paulsen 2009, 2010a, 2010b). The findings were discouraging; they showed that these media provide many problems in relation to distraction, conflicts between pupils and teachers, and a high dropout rate. The definition of the situation reported in interviews with both teachers and pupils was that the pupils were in a situation of addiction! Our observations showed that the teachers either meet the new media with prohibition or unconcern. The result was control, surveillance, circumvention, mistrust, and pupils that did not learn to use new media for leaning, or to control their use.

Based on the knowledge of these studies we have initiated the three-year action research project Social Media Education (SME), where an experimentation

¹ For a more general introduction to SME see Tække & Paulsen (2012).

class (that runs from 2012-2014) is used to find new ways of teaching that fit to the new medium environment. As a principle the teachers in this test-class may neither meet the pupils with prohibitions or indifference in relation to the use of media, and in addition, they have to use two social media in their teaching namely Twitter and Wiki. Finally the teachers are committed to promote reflexion in the test-class through and about these media and the role of attention and how the pupils manage to handle the new attention-demanding situation in a learning perspective.

The aim of this short paper is primary to set up a theoretical framework to understand the social situation between teachers and pupils (i.e. teaching), the role of psychic attention and its social mediation and modulation (i.e. individual but socially mediated awareness) and how the upcoming of new media challenge and change this relationship between the former two (i.e. facilitating new forms of teaching and awareness). Secondly the aim is to put forward some examples of the new possibilities for teaching which can be achieved using the new media, and that the first results from SME indicates.

Theoretically we suggest that a combination of Luhmann's systems theory and the medium theory of Meyrowitz can be helpful. Luhmann's theory of social systems (Luhmann 1992, 1995, 2002) makes it possible to sketch out a guiding model of the rudimentary relationship between teaching (understood as a form of social activity or more precisely as an interaction system) *and* awareness and attention (as a psychic contribution to the social interaction) mediated through oral language (the basic structural coupling between social and psychic systems according to Luhmann). The advantage of choosing this theory (among many others) is that the difference - and thus also the relationship - between psychic awareness and social modulation and interaction become very clear-cut and "thematic". The disadvantage is that systems theory function on a very abstract level, calling for supplementing "middle range" theories. This is partly the reason for why we develop our theoretical model further through the introduction of the medium theory of Meyrowitz (1985). This more concrete theory enables us to discuss how new and other media than oral language influences on the relationship between

teaching (social interaction) and psychic systems (individual awareness and attention).

Interaction and structural coupling

To describe and analyse the challenges of the new medium environment the paper now present the basic situation of interaction through the framework of Luhmann

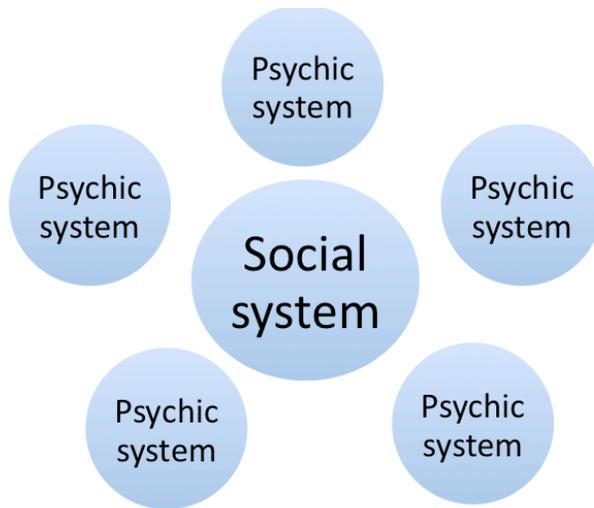


Fig. 1 Social system and psychic systems

(1995). In Luhmann's framework social and psychic systems are differentiated functionally (social systems communicate and psychic systems think and perceive) and only exist within each other's environments. Naturally neither of the two levels of systems formation could exist without the other one, as it's basic condition. The connection between them

Luhmann defines as a *structural*

coupling. Such a coupling does not include any overlap, but evolutionary developed reciprocal structures that are enabling them to cooperate or co-function. If the social system on the illustration is an interaction system, the psychic systems in its environment is contributing to it by utterances, but it is always the social system itself that regulates which utterances, which are included in the system.

Furthermore the utterances have only communicative consequences if the psychic systems pay *attention* to them (if no one *hears* the cry of a man in a desert, there is no communication, only utterance, and thus no social interaction). Yet, the norms, the regulation of the social is always only social and process only through communication.

This also applies to teaching where the psychic systems in the environment of the interaction system, typically is one teacher and a class of pupils. At first glance we would believe that the teacher decides every thing - all right - that is not totally

wrong, but one has to take into account that the teacher has a socialization history, works in an organization (a school), with a leader, meetings about class management etc. Especially the teacher has a social history together with the class determining her reactions, making her reactions and the teaching interaction expectable. This means that both the teacher and the pupils has expectations to how the interaction process will turn out, by which norms it will be regulated.

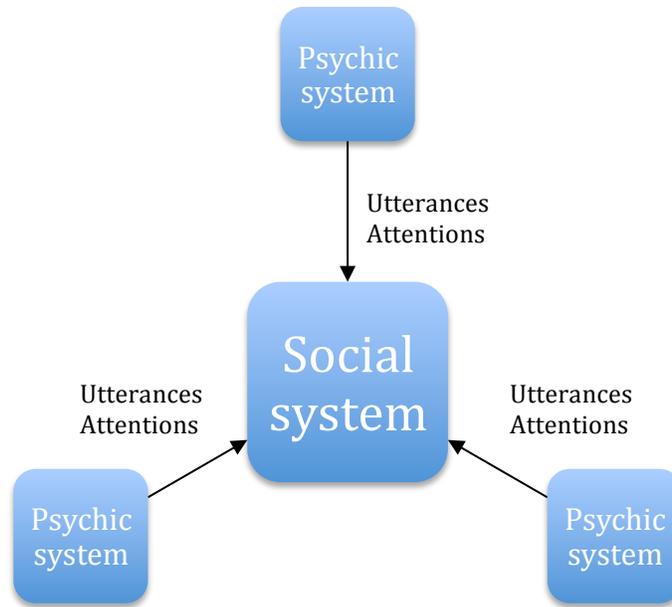


Fig. 2 Basic modes of how psychic systems are linked to social systems based on oral language

Following Luhmann (1995) exactly expectations is the same as *structures*, they enable the *coupling* between psychic and social systems – and these structures, i.e. expectations, regulates both utterances and attention. Thus a pupil is basically attributed with some kind of moral or even legal duty to both contribute and be aware of what is going on in the lesson. Both contributions and attentiveness are in this way socially regulated through socially maintained expectations that can only be demarcated and changed through communication. This also goes for the point that such expectations can vary a lot; say from pre-schooling to university lectures. Each interaction system builds up its own structures and ways of making structural couplings between the uttering and attending psychic systems and the communicating social system – conditioned by the willingness, authorities,

braveness, skills etc. of the participating psychic systems, and conditioned by the social environment, e.g. universities as a social environment for university lectures.

Language as the structural coupling

Luhmann (2002, 275), in his introduction to the systems theory writes, that *language* is the mechanism behind the structural coupling between psychic and social systems. By language society can temporalize its complexity, by having the internal capacity, to adapt to transitory conditions, through transitory states in the system. The system can combine short states with structures, which organize the transition from one state to the next state. Language is the medium for phrases as forms. The perceptual acoustic medium thus provides space for the temporality required, in the coupling and decoupling of phrase-events in the medium of language (Luhmann 1992, 33). Language thus regulates and orientates simultaneously *utterances* and *attentions* - and to a certain extent only utterances and attentions linguistically formed are accepted as communicative relevant; e.g. when someone utter words loudly in a class it is almost certain to be taken as a communicative contribution in need of a response; whereas simple gestures might more likely be taken to be noise if not coded properly - as when one puts up one's hand - which is a kind of language in the extended sense.

Luhmann (1995, 273) further suggests the term *capacity to form episodes* for what consciousness's autopoiesis acquires through the use of linguistically formed thoughts. The ability means that the consciousness can differentiate and discontinue operations. It can jump from one context of linguistic thought to the next, without completing its own self-reproduction, without preventing the possibility of further thoughts becoming conscious.

Because of language we can *consciously* direct our attention between different subjects and interaction partners, social systems, sounds etc. following our intentional subject. This has always meant that in training or learning situations, pupils has lost their attention to other things and subjects than the one in focus in the teaching interaction, for instance, the pupil pay attention to the pupil next to him who are whispers something. Also animals can concentrate on an object and also

lose concentration, but because of language we can concentrate on concentration and be conscious, reflected and selective about our attention.

Media revolutions

Following Luhmann (1995), language let the two levels of systems formation emerge, because it enables each system's respective self-reference. With language it became possible to communicate about communication and to be conscious about consciousness. By the means of language social and psychic systems can maintain themselves as operationally closed systems that at the same time are cognitively open to each other through meaning. Consequently it is the medium of language that is the *nurse*, or as Luhmann (1999, 225) puts it, the *muse* of society, and following an overview angle on Luhmann's argumentation, language is also the nurse of the creation of the psychic self. During the social evolution other media of communication have developed and further extended the structural coupling between psychic and social systems (Tække 2011). After Language came writing, then printing, electronic media and now also digital media, each extending the scoop for psychic and social formations, providing and in the same time requiring, incised complexity in both psychic and social systems (ibid.). When writing came about, for example, it enabled much more complex social structures which was only possible because psychic systems could learn to read (that is learn to pay *attention to written words and sentences* in an adequate manner) and write (that is learn to make *written utterances* adequately) and/or (like most people did) just learn to behave properly in a society based on also writing. The change was from hunter-gatherer societies, over a very long evolution of writing systems in accordance with the social structures made possible by them, to the phonetic alphabet of the ancient world's large and complex stratified societal differentiation.

On the micro level every invention of a new medium of communication alters the basic modes of utterance and attention and thus the structural coupling between the social system and the psychic systems. With oral language, writing, printing, electronic media and now digital media the relationship between the two types of systems becomes very complex. Until digital media emerged synchronous

interaction was only preformed using oral language.² In teaching this means an enormously surplus of *potentials* for linking pupils and teachers through utterances and attentions to the teaching understood as a social interaction system. The communicative sequence unfolding the teaching as a social system can be accessed and attended in several ways and both teachers and pupils can contribute in many different ways.

Interaction and digital media

Digital media opens for inclusion in interaction systems parallel to the oral one in the classroom. This enables a backchannel for communication about the education topic, or situation, or about the teacher, or about everything else. This is a new (expansion of the) coupling between psychic and social systems. It demands that psychic systems present can oscillate between the spoken and written communication, and between different interaction systems based on writing, or between interaction and other activities like gaming.

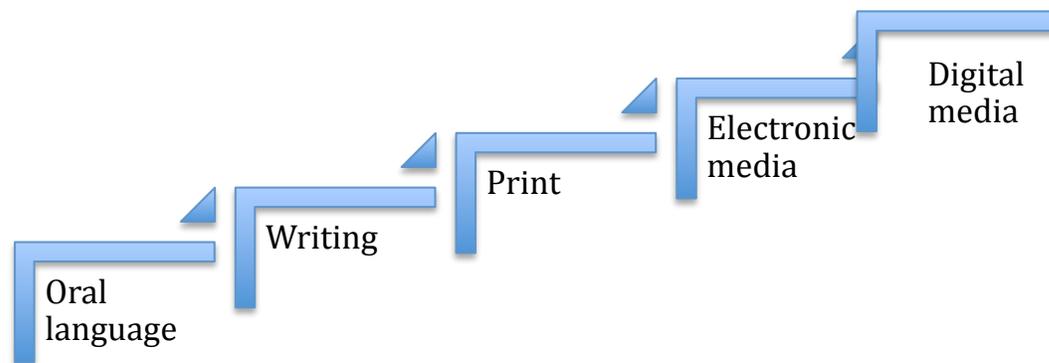


Fig. 3 Increases in the possibilities of social interaction through mediated utterances and attentions

² This is based on a distinction between communication and interaction, where interaction includes a form of synchronicity and presence. According to Tække (2002, 41): “Cyberspace-interaction is when two or more persons at the same time are observing utterances from one another by a technology that reduces geographical space.”

Digital media not only enable synchronous interaction but, near synchronous interaction (an asynchronous interaction with only a little delay) providing the possibility for switching between several conversations. As long as this is possible social systems extends their complexity – they can use contributions from everybody online, and use the many possibilities provided by the digital infrastructure.³ At the same time psychic systems gain the possibility for inclusion in interactions not based on geographical nearness. Now pupils can stay in contact with friends in other classes, friends who are ill and stay at home, their parents etc. on social media like Facebook or through SMS.

Media revolutions and inadequate norms

At the time before the electronic media emerged, society was based on oral language, writing and the printing press. In this society knowledge was kept at special places with restricted access and in printed books and newspapers. Such a place could be the teacher's staff room, sections of, or the whole library, or the parents slipping room and because children could not read before school, and not read well enough before the end of their school years, their relation to the teachers were very asymmetric (Meyrowitz 1985). This situation altered dramatically with the introduction of the electronic media, especially with the television. Now children could know about everything before they even began in school. It was not only about society and their school topics the pupils now knew, it was also about the teachers, that they did not know everything and that they could be wrong and unsecure etc. Also now parents could know more about how children were treated, that children maybe was humiliated or even hit. This was a new information situation provided by the new medium environment. It meant that the norms, which before had managed the social relations in the teaching situations, became inadequate. In the following years new norms adequate with the new medium

³ Digital media opens for automated transmissional, consulting, registrational and conversational interactivity – and in combination they provide the social with many new possibilities, see Tække (2006).

environment, were produced through interactions in school that were made content in the electronic media.⁴

Now with the digital media the information situation and also the communication situation are changed making the norms that regulates the social relations in schools inadequate again. We are not talking about addiction, but about ambivalences where it is not clear what kind of communications that it is legitimate to initiate in what media, or what information it is legitimate to find in what situations in what media. Also it is not clear who is responsible for the different kind of use of media for different purposes. If a pupil's father, for instance, is ill, it is obvious that the pupil should read text messages and send text messages to him, but there are many unclear cases where the border is not clear. In this situation prohibition and ignorance is not very productive. Therefore in SME in our test class we work with prohibition of both prohibition and ignorance, meaning that the teachers are not aloud to prohibit any media use, or be unconcerned with any media use. Also the teachers have to use Twitter and Wiki in their teaching, partly to use the new possibilities for teaching and partly to help develop and produce norms adequate with the now being medium milieu.

Attention to attention

The most important element in the SME-project is the work with reflexivity. The teachers must help pupils to develop a reflected use of media and they must also themselves have a reflected and understanding way of being concerned with the pupil's use of media. This includes helping the pupils to be attentive in relation to their attention. In all probability, this double task can only been maintained adequately through the interaction between the pupils and the teacher. Neither the pupils nor the teacher have a priori knowledge of the right way to handle this new complexity. The communicatively achieved attention to attention (and the problems of attention in the new medium milieu) can be seen as a way of reducing and controlling the new complexity arising from the infinite possibilities of interaction in the classroom. Yet, one guiding tagline here is that *it is not possible to multitask*.

⁴ Meyrowitz (1985) calls this process effect-loops.

Naturally if one of two activities is automated like when you are driving a car while you are chatting it is possible, but if the traffic situation turns complex you must shut up. Taking social media as an example, a pupil can see that there is an update on Facebook while listening to the teacher, learning something new, but not read or write an update – and still simultaneously follow the new argument the teacher puts forward. On the other hand one has an ability to switch between different activities, depending on how well one's short-term memory is and how strong one's will and situational involvement is in the leaning activity. Also one's reading, writing and IT-skills has a strong effect on how good the single pupil is at switching forth and back between the teaching interaction and other interactions and doings, like gaming or surfing on the net reading news or other stuff. The single pupil must know his own attention scope, his good skills and shortcomings, and the teacher must help him understand and take action on the basis of a reflected point of view. One's standard in the different school subjects also has influence on what you can afford of averted attention. This means that it can be different not only from pupil to pupil, but also from subject to subject, e.g. from English to math what the pupil can afford of averted attention.

Attention of and maintaining social identity

Another aspect teachers have to be attentive to is that especially for young people, social identity and membership in groups and networks is a very important thing. In a medium environment that includes digital media and wireless networks people must write themselves into existence on a daily basis, if they want to maintain their social identity in groups and networks where they are recognized and acknowledged. Teachers must meet pupil's inclusion in parallel interaction systems with understanding, and help them to reflect about their standard in the specific school subject, to help them, to evaluate every time they are interpellated, to decide if they can effort the networking or not, in relation to respectively their social identity and their school results.

Interaction with closely related as lovers, parents and siblings can have an urgent character on the one hand, but can also be too much on the other. Again,

teachers must help their pupils to pay attention to attention and be reflexive and evaluate the situation in regard to how important it is to respond right now? Or if it can wait until the brake or to the school day is over. The pupils must reflect on how much averted attention they can afford, and during their school time, before they reach the university or the labour market, they must be able to self-regulate within the new medium milieu.

New possibilities for learning – Multiplexing as an example

One of the many new ways to use the new media in teaching that has been developed in the SME-project's test class is different kind of multiplexing. Multiplexing means that you direct your attention to the same topic through multiple media. This could be listening to the teacher, while you see what she is writing on the blackboard, while you write your own notes at the same time. With an interaction medium like Twitter the pupil's teaching-oriented attention is multiplied further, while they silently can discuss a presentation or a film while it is going on. Like with multitasking it is not possible to do two intellectual demanding activities at the same time, but only possible to switch your attention from activity to activity. And again there is an individual difference from pupil to pupil in how well they can perform the multiplexing. Our empirical findings show that the pupils who did *not* master to write synchronically while seeing the movie, but did manage to read the contributions from the teacher and others pupils, who did real-time analysis, still got a better analytical level afterwards than if they did not have been switching their attention between the film and Twitter reading what the others wrote.

Conclusion

The internal capacity, to adapt to transitory conditions, through transitory states in the system, is different from person to person, from subject to subject, from situation to situation. The optical digital medium provides space for the temporality required, in the coupling and decoupling of phrase-events in the medium of language. In the new medium milieu including digital media and wireless networks the more complex social environment calls for attention to attention. This again

requires the social production of new norms for the social relations between pupils and their teachers, where the teachers must initiate a reflexive communication about media use and also themselves use the new media in their teaching and thus authorising new interaction possibilities suited for learning. The aim is enabling new possibilities for learning and cooperation, based on a reflexive approach to attention and the new medium environment and its possibilities.

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